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# Patent Abstracts of Japan

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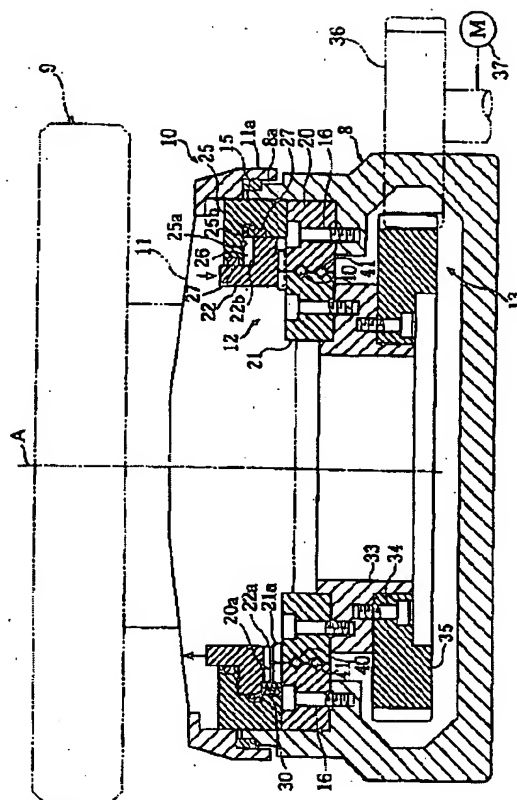
APPLICATION DATE : 27-11-00  
APPLICATION NUMBER : 2000359491

APPLICANT : MORI SEIKI CO LTD;

INVENTOR : OKUMA MASAHIRO;

INT.CL. : B23Q 16/10

TITLE : ROTATION INDEXING DEVICE FOR MACHINE TOOL



ABSTRACT : PROBLEM TO BE SOLVED: To provide a rotation indexing device for a machine tool capable of securing the supporting rigidity of a rotation-side coupling without causing problems on wear due to sliding resistance and on an increasing the number of part items.

SOLUTION: The rotation indexing device 10 comprises the rotation-side coupling 21 fixed to a rotation part 11 and a fixation-side coupling 20 fixed to a fixing base 8, both arranged coaxially with each other, a joint coupling 22 opposed to both of the rotation-side and fixation-side couplings 21, 20 in an engageable manner, arranged to be movable between a clamp position, where the rotation-side coupling 21 in engagement is clamped at a rotating angle position and an unclamp position, where it is unclamped, and rollers 40, 41 arranged in upper and lower lines between the rotation-side coupling 21 and the fixation-side coupling 20, the rotation-side coupling 21 being supported by the fixation-side coupling 20 via the roller 40, 41 in lines.

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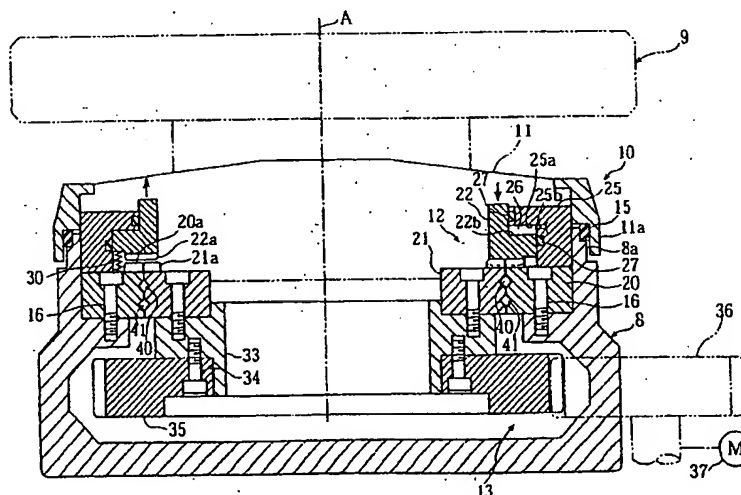
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### (54) Rotational indexing device of machine tool

(57) Provided is a machine tool rotational indexing device capable of avoiding or restraining the reduction in the preload of any of rolling element rows or restraining the reduction in the support rigidity of the rotary-side coupling even if the preload is decreased. Rolling elements are arranged between a rotary-side coupling 21 and a stationary-side coupling 20 so that a plurality of rolling element rows are formed and a prescribed preload acts when a joint coupling 22 is located in an unclamped position. The rolling element rows are con-

structed of a first rolling element row L1 arranged in a direction in which the preload increases as the joint coupling 22 moves to a clamped position and a second rolling element row L2 arranged in a direction in which the preload decreases. Further, the first rolling element row L1 is positioned farther apart from the meshing engagement portion of the couplings than the second rolling element row L2, and the rotary-side coupling 21 is supported on only the stationary-side coupling 20 via the first and second rolling element rows.

Fig.1



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# EUROPEAN SEARCH REPORT

Application Number  
EP 02 02 8648

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A,D, P	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 10, 10 October 2002 (2002-10-10) & JP 2002 160144 A (MORI SEIKI CO LTD), 4 June 2002 (2002-06-04) * abstract *	1,3	B23Q16/02 B23Q1/40 B23Q16/10
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A	GB 2 111 873 A (DAVIS GAGE AND ENGINEERING COM) 13 July 1983 (1983-07-13) * abstract; figure 1 *	1,3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B23Q
The present search report has been drawn up for all claim.			
Place of search <b>MUNICH</b>		Date of completion of the search <b>23 July 2003</b>	Examiner <b>Lasa, A</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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ON EUROPEAN PATENT APPLICATION NO.**

EP 02 02 8648

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23-07-2003

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82